Kentucky Route 840 Bridge
Spanning the Cumberland River,
on Kentucky Route 840
Loyall
Harlan County
Kentucky

HAER No. KY-14

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
Southeast Region
National Park Service
U. S. Department of the Interior
Atlanta, Georgia 30303

HISTORIC AMERICAN ENGINEERING RECORD

Kentucky Route 840 Bridge

HAER No. KY-14

Location:	Spanning the Cumberland River on US 23 Loyall, Harlan County, Kentucky UTM: 17.290010-4080390 Quad: Harlan
Date of Construction:	1924
Builder/Designer:	Vincennes Bridge company
Present Owner:	Kentucky Transportation Cabinet State Office Building Frankfort, Kentucky 40622
Present Use:	Vehicular Bridge
Significance:	The Kentucky Route 840 Bridge is the longest of six Baltimore Pettit trusses built in Kentucky, and the best example of the three bridges built by the Vincennes Bridge Company in Harlan County in 1924.
Historian:	Gregory D. Rawlings

The Kentucky Route Bridge over the Cumberland River in Harlan County appears to be eligible for the National Register of Historic Places. The structure was built by the Vincennes Bridge of Vincennes, Indiana, in 1924. It is an early Eastern Kentucky example of a Baltimore truss. The bridge type was named for their extensive use by the Baltimore and Ohio Railroad. The Baltimore truss, first introduced in 1871, added sub-struts and/or sub-ties to the basic Pratt form with parallel top and bottom chords. The addition of sub-struts and sub-ties strengthened the truss as a response to the increased size, weight and speed of locomotives in the latter part of the 19th century.

This two-lane metal through truss bridge is located between the communities of Loyall and Rio Vista in southeastern Kentucky. It is a single span with a 20.5-foot roadway width and a total length of 243 feet. The structure had major repairs in 1954, but has deteriorated some since the sufficiency rating is 48 out of 100 points. During this restoration process, a six-span concrete structure was built parallel and adjacent to the steel bridge. This concrete bridge has a roadway width of 10 feet and a length of 288 feet, and is presently used as a pedestrian bridge.

The Baltimore truss has concrete abutments with large I-beams for floor beams, smaller I-beams for stringers, and paired angles for lateral bracing. The deck is corrugated steel covered with bituminous asphalt pavement, with no provisions for sidewalks. The six-panel truss has inclined end posts and top chords that are made in a box section from two channels, cover plate and lacing bars. The intermediate posts, diagonals, sub-struts and horizontal struts are built-up sections made from paired angles with lattice bracing. The top and bottom chords are connected with alternating intermittent battens. The hip verticals paired angles with lacing bars. The end post and lower chord are connected by a gusset plate and pin to a masonry-bearing plate that is anchored to the abutment. This forms a hinge type of connection that allows for end rotation of the members.

The "Survey of Truss, Suspension and Arch Bridges in Kentucky," completed in January 1982, located six Baltimore trusses in the State. This structure is the longest of those and the best example of the three bridges built by the Vincennes Bridge Company in Harlan County in 1924. This bridge is somewhat unique, in that it incorporates horizontal struts in conjunction with the more common sub-struts in the panels.

The western inclined end post still retains a builder/date plate identifying the
bridge. The then-Department of State Roads and Highways in Frankfort is listed as the contracting agency. The capacity is indicated as two 15-ton tractors with its original wood floor. The present weight limits are posted as 16 tons for single axle trucks, 17 tons for double axle, and 19 tons for triple axle.

Although only in fair condition, the Kentucky Route 840 Bridge in Loyall retains its structural integrity. This structure is a rare example of a Baltimore truss in Kentucky.